

## **Egg-speriment: Exploring passive transport**

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Table: \_\_\_\_\_ Section: \_\_\_\_\_

One of the cell structures you will be learning about is the cell membrane. For this experiment, you will model how a cell membrane works to let water enter and leave the cell. You will use a chicken egg as a model of a cell. After dissolving the shell in vinegar to expose the membrane, you will soak the egg in various liquids and observe how the size of the egg changes as it takes on or loses water through the membrane. You will also keep a daily record of the observations and measurements of the egg.

### **Procedure:**

- 1) As soon as you get your egg, observe its features and measure its circumference. Record your observations on the next page using the table and chart.
- 2) Soak the egg in vinegar for two days.
- 3) Observe and record how the egg has changed, including any changes in appearance or texture on each day. Also measure the circumference of the egg, using a piece of string. Record your observations and measurements.
- 4) Soak the egg in Plain water for two days.
- 5) Observe and record how the egg has changed, including any changes in appearance or texture on each day. Also measure the circumference of the egg, using a piece of string. Record your observations and measurements.
- 6) Soak the egg in salt water for two days.
- 7) Observe and record how the egg has changed, including any changes in appearance or texture on each day. Also measure the circumference of the egg, using a piece of string. Record your observations and measurements.
- 8) Soak the egg in food coloring for two days.
- 9) Observe and record how the egg has changed, including any changes in appearance or texture on each day. Also measure the circumference of the egg, using a piece of string. Record your observations and measurements.
- 10) Graph the data you have collected and prepare a report of your results. Be prepared to share your results with the class.

Date	Liquid	Circumference (mm)

Day 1 Observations: Liquid \_\_\_\_\_

Sketch of Egg

Observations

Day 2 Observations: Liquid \_\_\_\_\_

Sketch of Egg

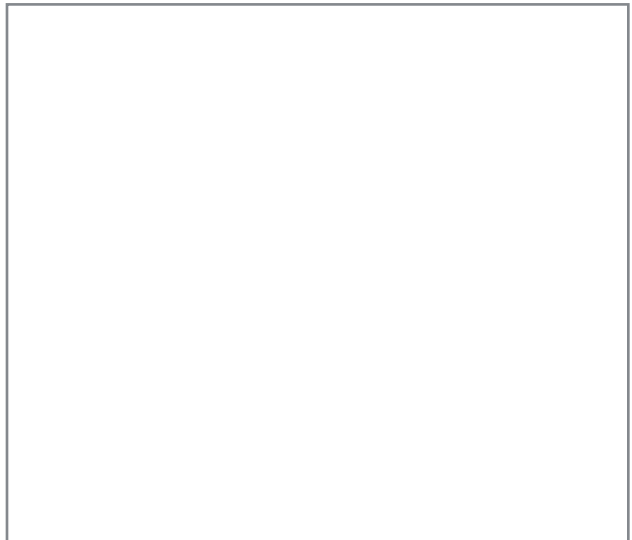
Observations

Day 3 Observations: Liquid \_\_\_\_\_

Sketch of Egg

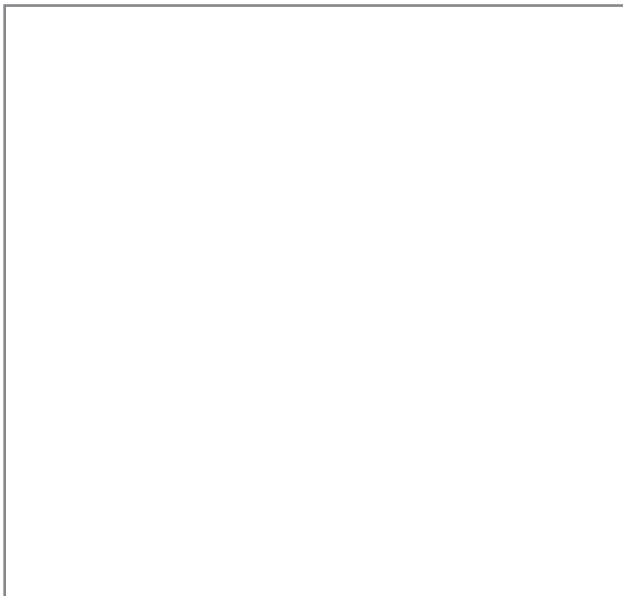


Observations

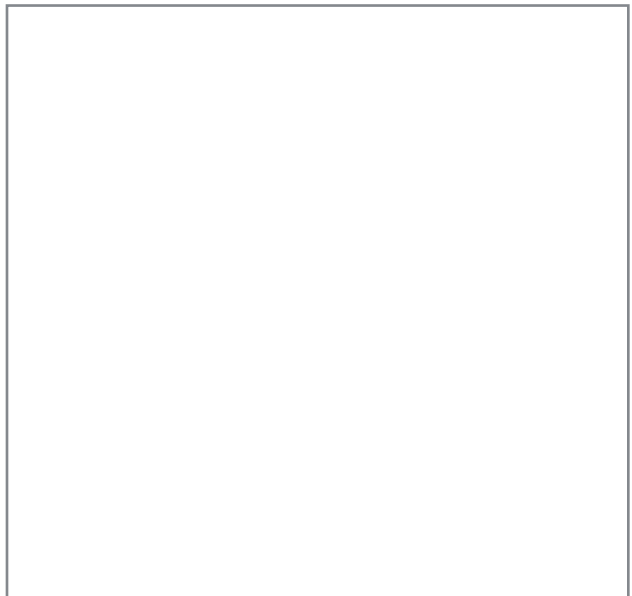


Day 4 Observations: Liquid \_\_\_\_\_

Sketch of Egg




Observations

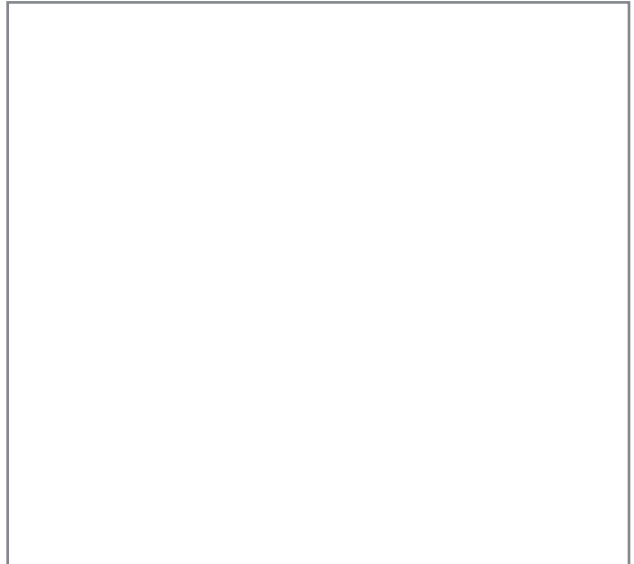


Day 5 Observations: Liquid \_\_\_\_\_

Sketch of Egg

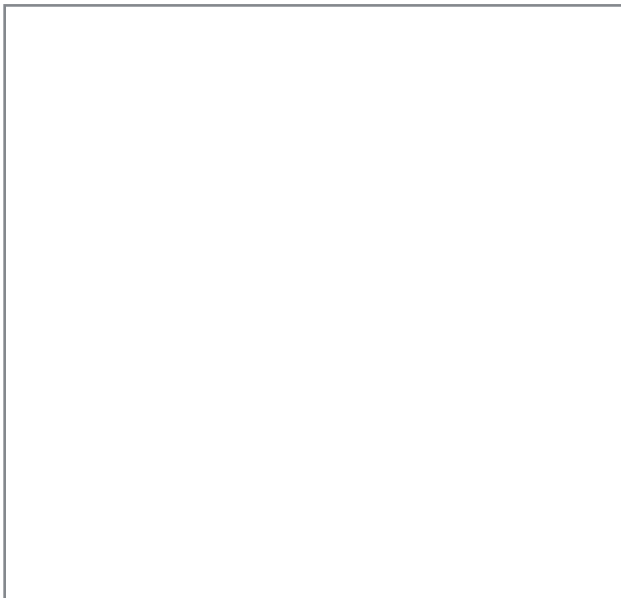


Observations

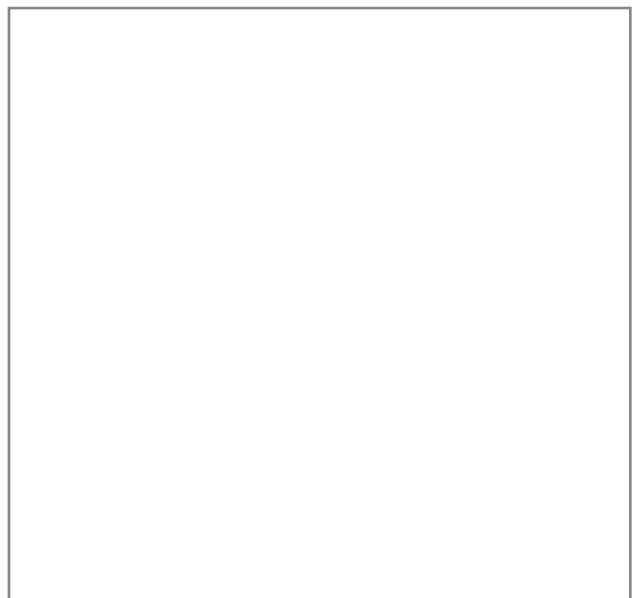


Day 6 Observations: Liquid \_\_\_\_\_

Sketch of Egg

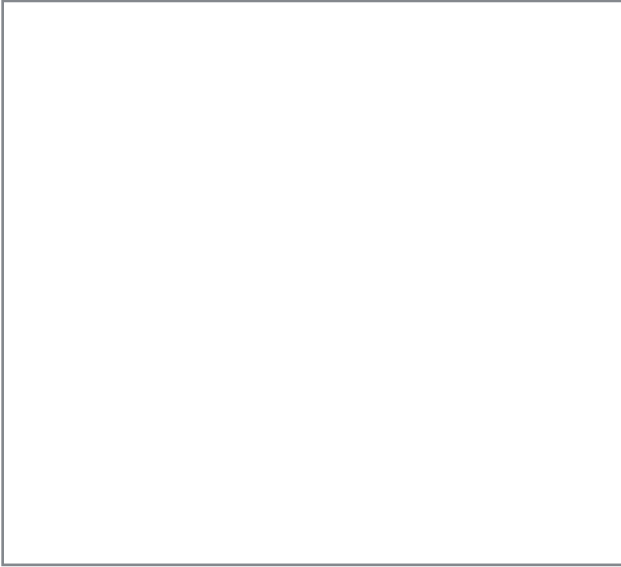


Observations




Day 7 Observations: Liquid \_\_\_\_\_

Sketch of Egg

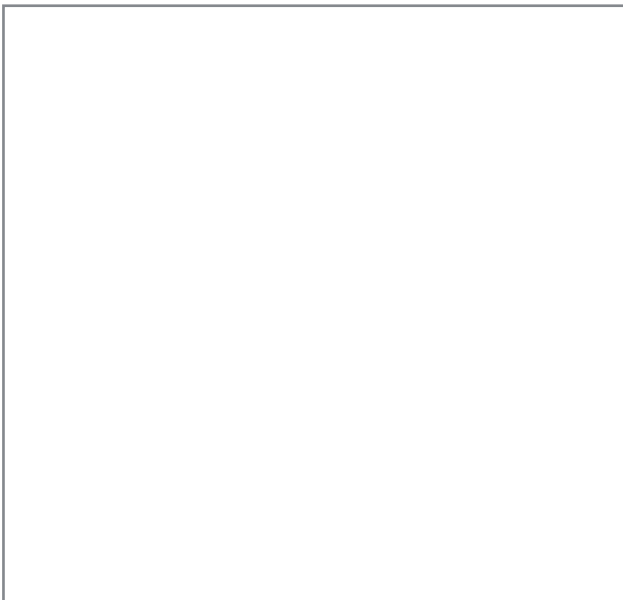


Observations

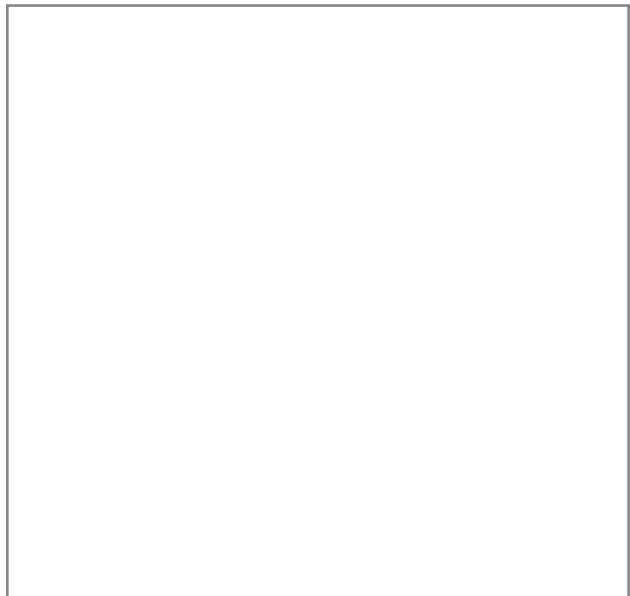


Day 8 Observations: Liquid \_\_\_\_\_

Sketch of Egg



Observations



Analyze and Conclude:

1) Graph the data using a bar graph showing changes in the circumference in the egg. Label the horizontal axis of your graph "Date" and the vertical axis "Circumference (mm)". Also indicate on the graph what liquid the egg was soaking in each day.



2) Did any liquids cause the egg to expand? If so, why did this happen?

3) Did any liquids cause the egg to shrink? If so, why did this happen?

4) What do you think the purpose of the Vinegar was for?

5) If we were to do this experiment for two more days, what other liquid would you use to soak the egg? What results do you think you would observe?